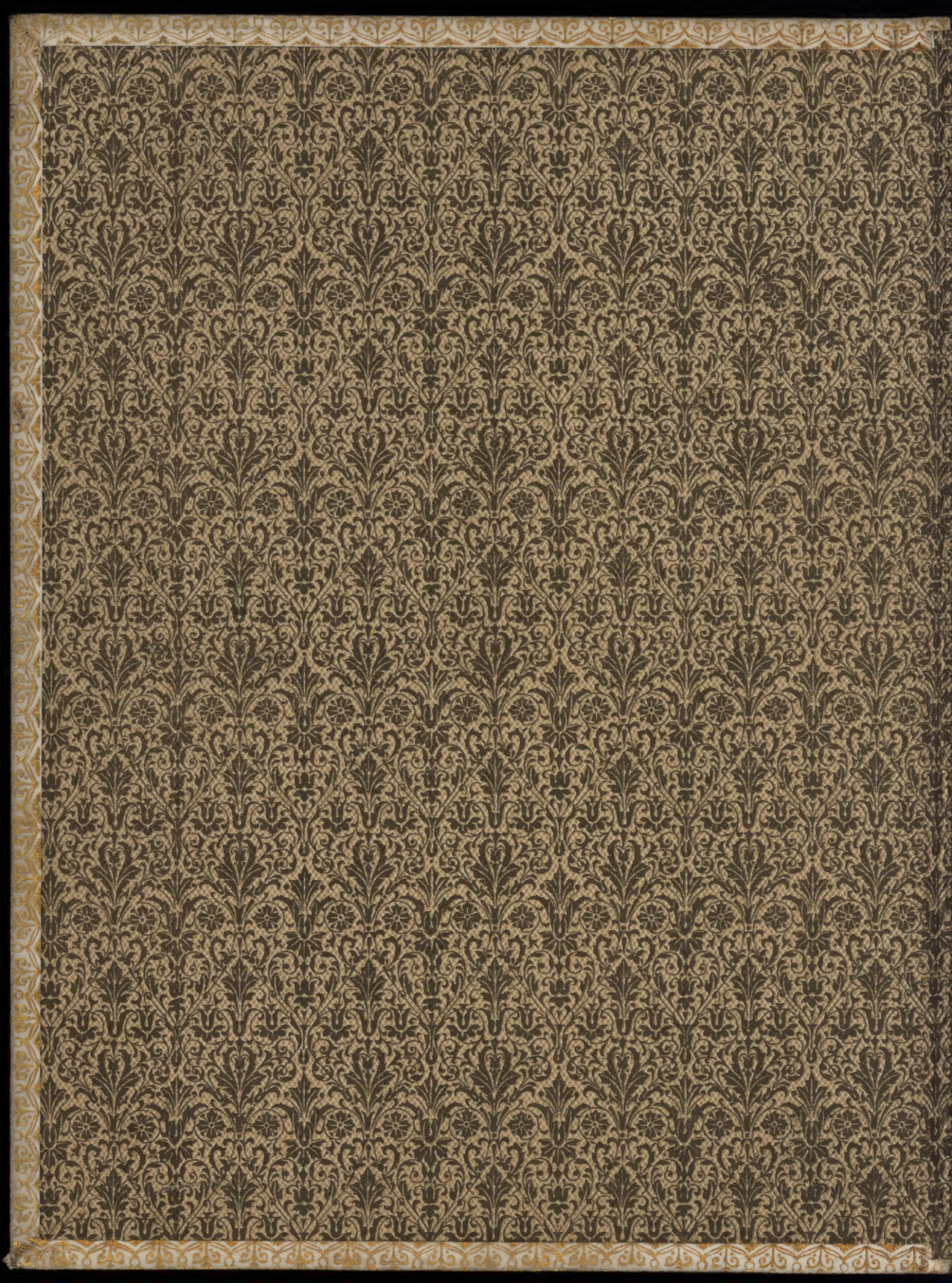


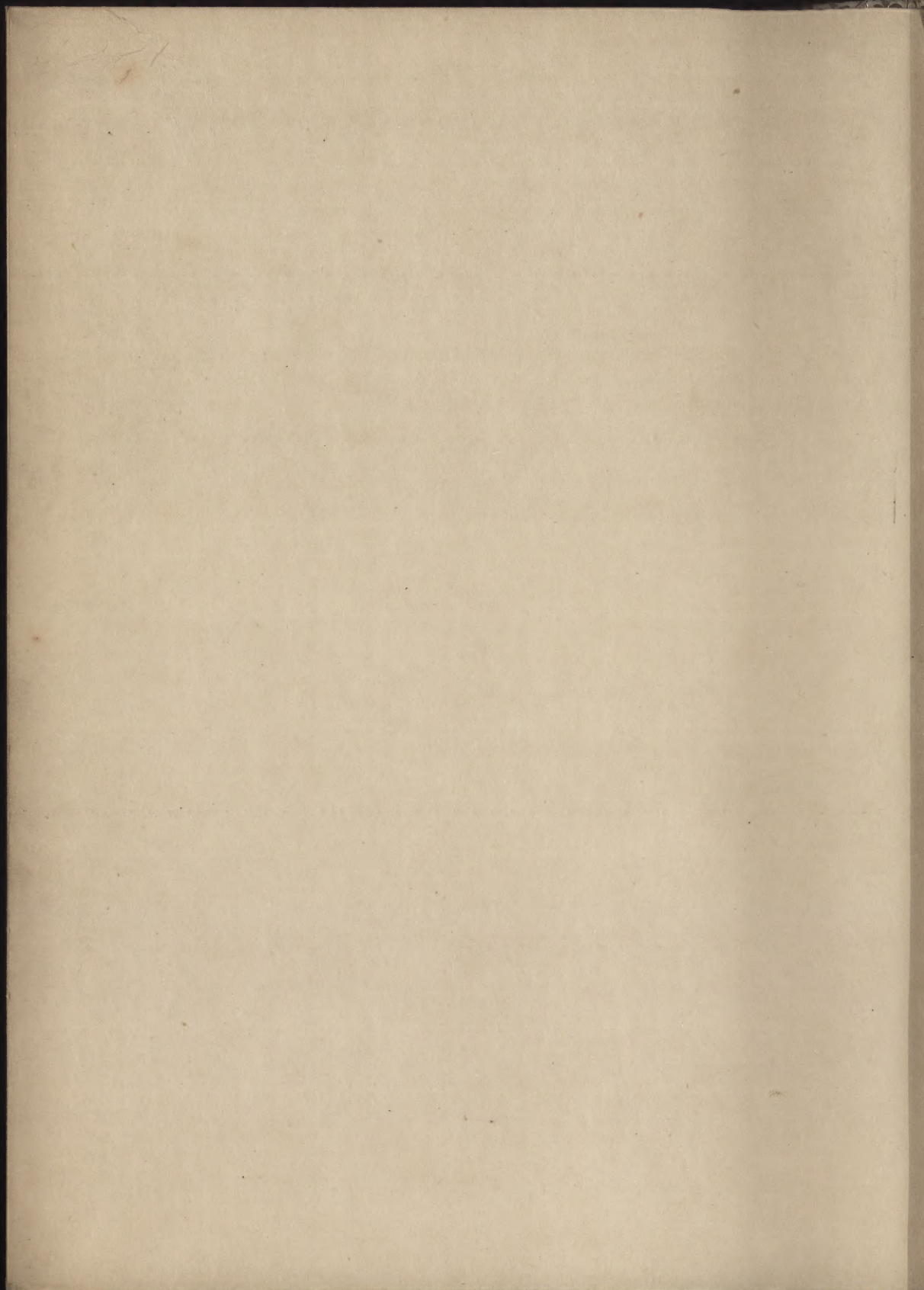
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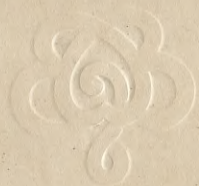
BY FRANK
SHORT.











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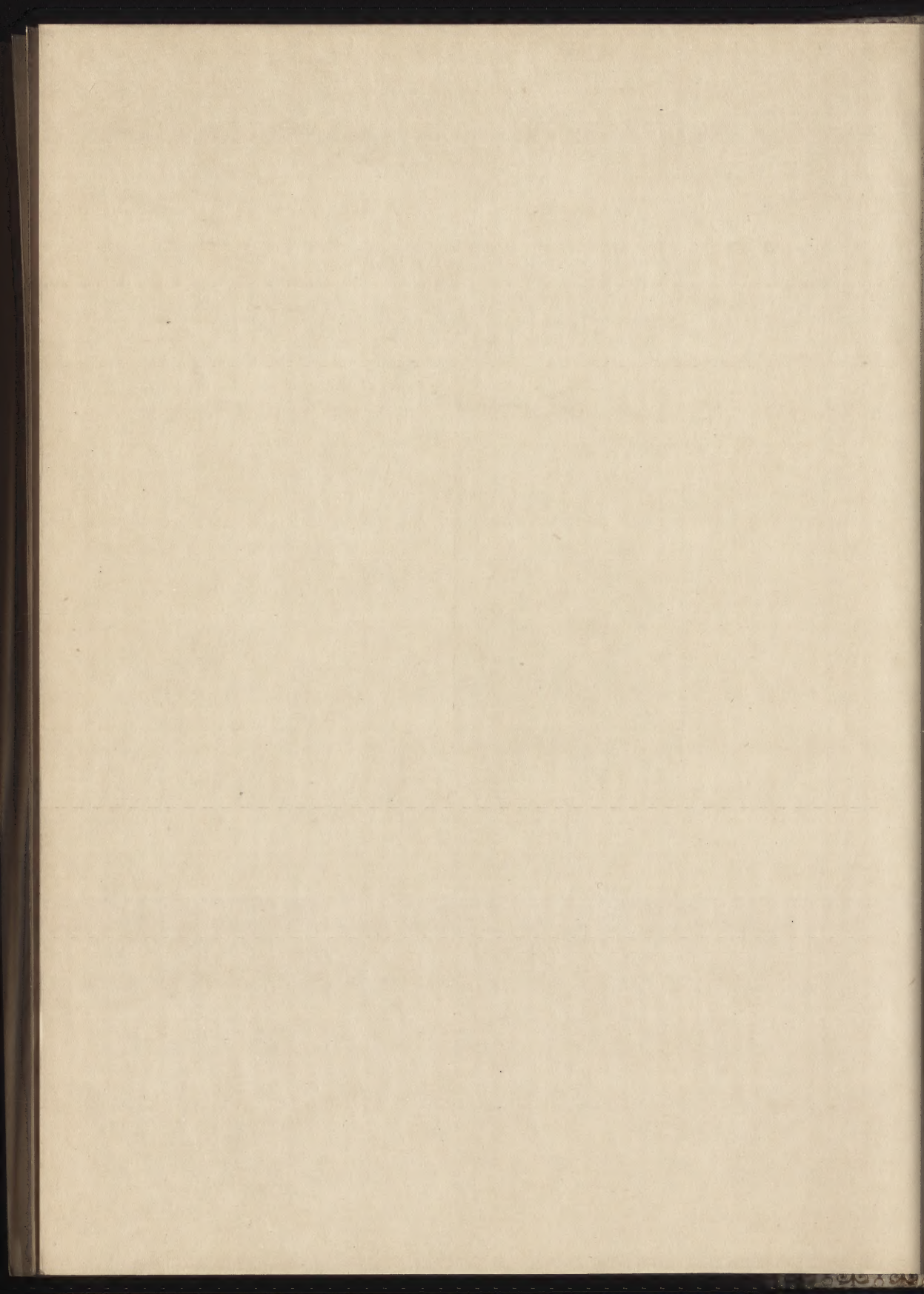
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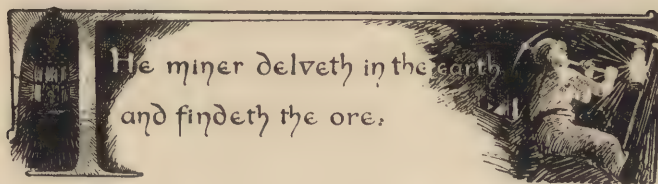
ON THE
MAKING OF
ETCHINGS.
BY FRANK SHORT.



London.
ROBERT DUNTHORNE.
at the sign of the Rembrandt Head
in Vigo Street. W.
1888.







He miner delveth in the earth
and findeth the ore.



He smith hammereth the metal and
maketh it into polished plates.



He etcher worketh cunningly with
his point and biteth the plate
with strong water.

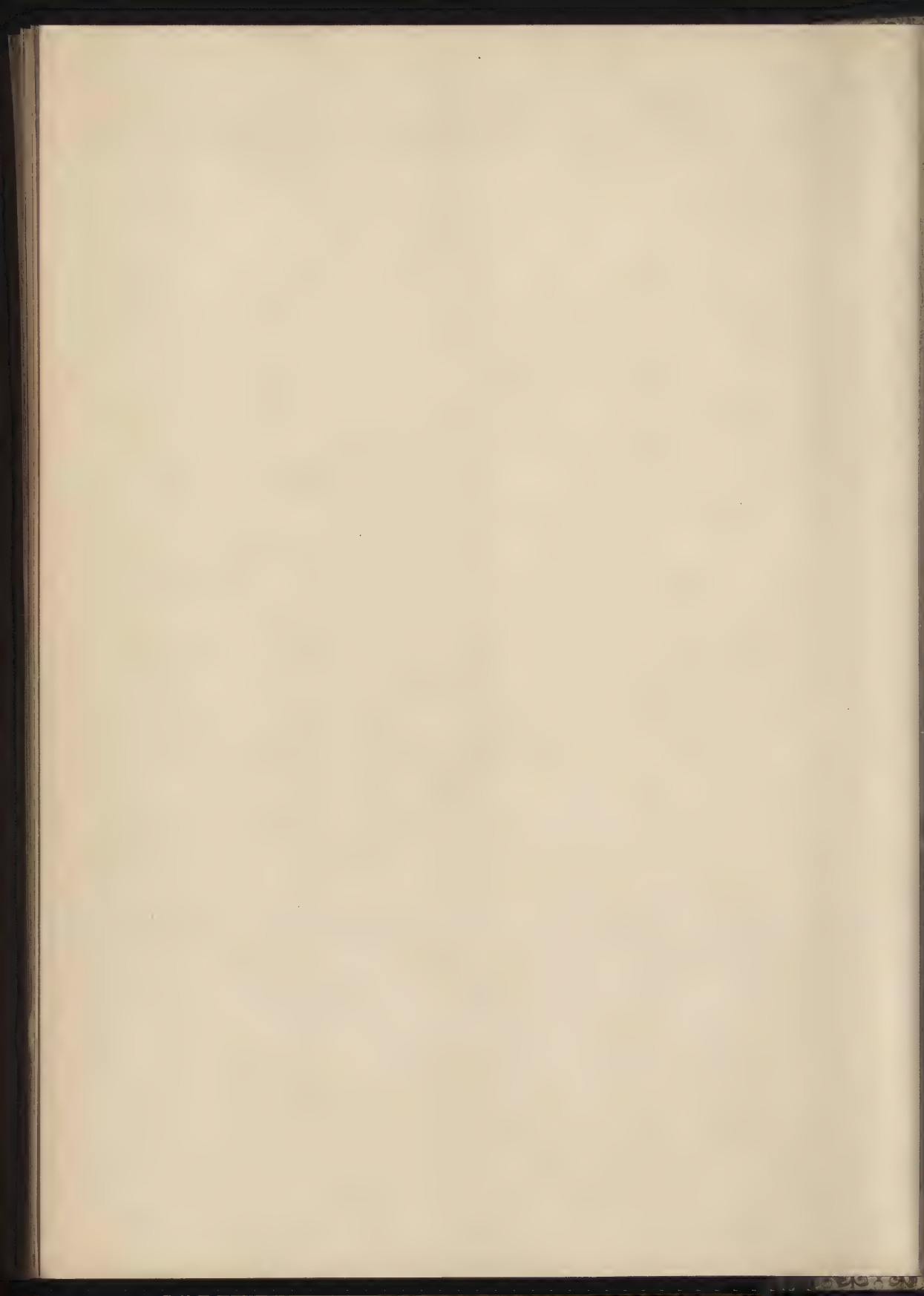


Also the printer, he standeth by
his press and considereth
the ink.



And the desire of all these is in the
work of their craft.





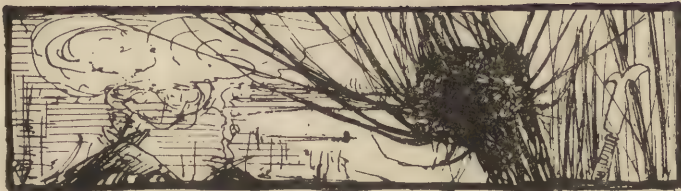
LIST OF PLATES.

	PAGE
Plate I. <i>Etching</i> —A NORFOLK MILL . . . By WILFRID BALL.	4
Plate II. <i>Etching</i> —WHITE HART TAVERN, BATTERSEA	12
Plate III. <i>Examples of Methods</i>	30
Plate IV. <i>Envoy</i> .	





Cisipradah



ON THE MAKING OF ETCHINGS.



LINE drawn with a pen and ink is not an etched line, and a drawing done with these lines is not an etching. An etching must be printed from a metal plate. The manner of obtaining a print or an "impression" from a plate is roughly as follows:—The plate is first covered thickly with copperplate ink, which is a rather thick and greasy substance, and may be of any colour. The printer proceeds to wipe this gradually away again with a piece of coarse canvas; but where there is any roughness on the plate, such as furrows or pits sunk into it, or pieces of the metal standing up in relief above the general level of the surface, the ink will not come away. The paper, or whatever substance is to receive the impression, is then laid upon the plate, and by means of heavy pressure forced into such close contact with it, that the printer's ink which was left there adheres to the paper, thus making the print or impression, and thereby "proving" the correctness or otherwise of the work that has been put upon the plate.

This process of inking and wiping the plate has, of course, to be repeated for every impression.

Every mark on a plate, however slight, yields a very exact likeness of itself in the impression.

There are a great many ways of working on the surface of a plate so as to make it hold ink in printing, and some of them are called by distinct names, such as mezzotint engraving, line engraving, and aquatint engraving; but there are many methods which have no special name.

But to be an etching proper the thing must be wrought with lines eaten into a plate by acid, or some substance which will decompose it.

Lines may be *scratched* direct into a metal plate without the intervention of acid, and this method is called "Dry-point," or Dry-point etching, and though it is really a form of engraving, is generally reckoned as belonging to etching.

Relief Engraving and Printing.

It is, perhaps, worth while to remark here that woodcut engravings (and also metal blocks engraved or etched to print like woodcuts) are printed in exactly the reverse manner to plate engraving or etching. In woodcut, or relief engraving, the original surface of the block or plate is the part that receives the ink to be transferred to the proof. All the parts not intended to print are cut away in the case of a wood block (or corroded away by acid in the case of a metal block), and the ink (a much more sticky kind), is dabbed or rolled on to the surface of the block.

It would be possible to print a wood block in the same manner as an etching, or an etching (if the lines were pretty deep) the same way as a woodcut, the result in each case being exactly reverse to their proper method, the lines in the etching shewing as white lines on a black

ground, and the black lines of the woodcut telling as white ones.

Now, having cleared the ground somewhat, we will follow in detail all the processes an etched plate is subjected to, from the time it leaves the rolling mill to the time it yields up its complete impression.

Most metals may be used for etching upon, but copper The Plate. is the one generally chosen. Zinc is also a good deal used, because the lines worked upon this metal print with a peculiar richness of quality. It is, however, softer than copper, and as a rule, wears out sooner in the process of printing.

Steel and iron can be used (two etchings by Albert Dürer, probably among the first ever done, were upon iron plates), but the quality of line they give is hard and poor. And there is no reason now for using steel, because copper can be coated with a wonderfully thin electro deposit of steel, renewed as often as it shews signs of wearing away; thus making the copper more durable than steel itself, and at the same time keeping the quality of the copper line.

It is difficult to imagine a better metal than copper for etching upon. It can be polished to a perfect surface, is soft enough to cut as easily as a carpenter cuts hard wood, can be prepared with any degree of hardness from being as soft as lead to as brittle as steel, and lastly, is a continual delight to work with, owing to its beautiful colour.

To make the plate the coppersmith gets the sheet metal from the rolling mill, of various thicknesses (that for small plates being about as thick as a penny), and selects the

Hammering.

most solid pieces to make his best plates from. The metal is then placed upon an anvil and hammered all over for some time, to ensure its being of an even density. This process is very important, and it is to be feared is often omitted in the manufacture of modern plates, being, of course, laborious work when done by hand. Rolled or machine planished coppers are not so satisfactory as those hammered by hand, and to make sure of its being done thoroughly, there are etchers who for important works hammer their plates themselves. The hammering makes the plate very hard; and to soften it again, it is made hot and dipped in water (copper behaving curiously the reverse of steel in this respect). The smith then chooses the best side of the plate for the front and goes over it with a kind of broad chisel which acts like a plane, cutting off the surface of the plate, and revealing any small holes or pits there may be. These are scooped out cleanly with a kind of bent gouge called a "scorper," and the hole thus made is beaten up level again from the back of the plate. This done, the face of the plate is hammered carefully with a polished hammer, traversing the plate methodically so that every part shall receive the same amount of blows; and the quantity of hammering given it being in proportion to the hardness of the copper required, the more it is hammered the harder the copper gets. The plate is now fixed down upon a kind of sink, and water is made to just cover it. A piece of sandstone is then rubbed backwards and forwards over the plate till all marks save those of the stone itself are removed; then it is gone over in the same manner with pumice stone, which leaves still finer scratches; then with snake stone (a



Polishing.

kind of slate with a finer grain than pumice stone); lastly, with sticks of charcoal made from willow branches. The plate is now taken out of the water and is beautifully smooth and flat, but is not polished. The final polish is got by rubbing it with the end of a roll of cloth or canvass, tightly bound up (called the "oil rubber"). It is used first with oil and the finest washed emery powder, and last of all with oil alone. The plate is now ready for the etcher—to spoil or otherwise.



Very often this is the first state an etcher knows of his plate, but it is well that he should know practically all the coppersmith's work, and be able to do it if necessary himself; because it often happens that part of an etched plate has to be altered, and although coppersmiths are very careful and wonderfully clever in manipulating plates, the etcher can hardly expect them to understand so well as he himself does, exactly what he wants altered.

Copper made now-a-days is nothing like so good as that made half a century ago. The coppersmiths say the difference lies with the smelters of the ore, and it seems to be so. The copper of to-day does very well in a general way, but for a bit of very delicate work, or for mezzotinting, where the grain of the metal is severely tested, there is nothing like old plates: and etchers who have got these, work upon them etching after etching, till the plate is ground away so thin as to be next to transparent.

Old plates.

The waxy substance which is put upon the plate, and through which the etcher scratches his lines with the needle, is called the "ground." The qualities a ground should possess are,—perfect resistance to the action of acid, firm

The Etching Ground.

adhesion to the plate, and a certainty of its being removed by the needle-point in a perfectly clear line without chipping up at the sides. These are obtained by mixing together in various combinations different waxes, gums, and resins. There are many good mixtures, most of them containing some of the following substances, viz. :—white wax, Burgundy pitch, gum mastic, and asphaltum. The ingredients are melted together and rolled up into balls, or the ground may be dissolved in chloroform or oil of spike lavender.

Laying the ground.

There are several ways of putting the ground on the plate, or "laying the ground" as it is technically called, the following three being most used.

Dabbed ground.

By the dabber. This is the old way, and very strong grounds can be laid with it. The plate (in laying *all* grounds) is made perfectly clean and free from grease by rubbing it with clean rag, and perhaps whitening. It is then laid upon a heated iron plate, kept at an even temperature by a Bunsen burner underneath, or held with a hand vice over a fire, or spirit lamp, and made just so warm that the ball of etching ground will melt upon being applied to the plate. The ball of ground is touched on to the plate in various places so as to leave sufficient ground to cover the rest of the plate, and it is then spread evenly over it by a bit of canvas which is free from fluff. Then the dabber is taken. This is a tool made of a pad of horsehair and cotton wool tied up in fine silk so as to form a handle on the top and to present a slightly convex surface on the underside to dab the plate with. This is dabbed with a quick short action regularly over the plate, while the



ground is still melted, and spreads it in a perfectly even and very thin coat. Then, while the ground is still melted, the plate is held, with a hand-vice, face down over the flame of a bundle of wax tapers (or a gas jet does capitally) and the smoke from the flame incorporates itself with the ground and makes it jet black. The plate is now left to cool, and when cold presents a perfectly black and shining surface like polished ebony. Bits of dust generally settle on the plate while the ground is being laid, but they are of little consequence. This method of laying the ground sounds complicated in description, but is really very simple in practice.

In laying the ground with the roller the etching ground is dissolved into a thin paste with oil of lavender ; a little of this is spread upon a piece of plate glass, or a spare plate, and the roller passed over it till it is charged evenly and thinly with the paste. It is then rolled in many directions over the plate to be grounded, and constantly returned to the glass or spare plate to be recharged, till the plate is evenly covered. It is then gently heated to drive off the oil of lavender, and smoked in the same manner as the dabbed ground. The roller lays a most perfect ground, exceedingly thin and clear, but the oil of lavender does not quite evaporate till it has been laid for a day or two, and until this time has elapsed it is too tender to bear transferring or rough handling.

The third way of laying grounds is by a solution of etching ground in chloroform. The solution is poured on to the plate and allowed to run all over quickly, and then the superfluous liquid is run off at one corner of the plate. The solution dries in a few moments, when it is heated and

Rolled
ground.



Liquid
Ground.

smoked in the same manner as the rolled ground. Many etchers prefer this method of ground laying. To do it well takes a little more practice than the other methods, but if successfully done it certainly makes a splendid ground for working on. It does not answer well, however, for laying grounds over work already bitten, because the solution runs away from the edges of the lines, and does not sufficiently protect the plate at those places.

Preparing the
plate for the
acid.

The plate having been grounded, its face is covered with a beautiful black surface which perfectly protects the metal from the action of acid, and if the back and edges of the plate be painted over with a varnish which will resist acid, such as common Brunswick Black, Turpentine Varnish, French Polish, or any other resinous solution which will dry pretty quickly, it may be immersed in a bath of acid without the acid attacking the plate anywhere but where the etcher scratches through the ground and lays bare the metal. The old etchers did not immerse their plates in the acid. Instead of painting over the back, they stuck a wall of wax round the border or margin of their plate, so as to make a dish, the bottom of which was formed by the plate itself, and poured the acid into this. Of course this did quite well, but it took a much longer time to do than the modern way.

The design may be drawn upon the plate with the needle and then put in the bath and "bitten," or it may be drawn in the bath itself and each line will commence to "bite" as soon as it is drawn. As a rule, both these methods are used on a plate, but we will follow the former one through first, being perhaps the more simple.





It will be understood that the design on the plate is the reverse of that on the proof. That is, that the right side of the plate becomes the left on the proof. The reflection of a proof in a looking-glass is the way it is placed on the plate. In outdoor etching, it does not much matter whether the drawing is reversed on the plate or not, because it should look as well one way as the other ; but if it is desired to make a portrait of any place, or to copy anything, it must be reversed on the plate : and of course all lettering must be reversed. In Plate III. Fig. 3 the lettering "soft ground etching" is the way lettering has to be put on a plate.

Reversal of
proof.

The design can be transferred to the plate in several ways. If there is a plate printing press near, the easiest way is to trace the drawing, or to make a drawing with soft lead pencil on a piece of thin paper, damp it slightly, and then turn it pencil side down on to the etching ground of the plate, and pass it through the press in the same manner as in taking a proof. The result is a drawing in beautiful grey lines on the black ground. But for very accurate work (for the damping and rolling through the press stretch the paper somewhat) or where a press is not available it is quite easy to transfer the design by hand.

Transferring
the design.

Black lead, or red chalk dry transfer paper is laid on the plate, a tracing of the design pinned down over this, and the lines traced over with a hard lead pencil or style ; of course if the tracing is laid on the plate the face side up, the transfer will be the same way as the drawing, but if the tracing be reversed the drawing will be reversed on the plate.

In working out of doors, it is rather nervous work beginning on a clear plate without anything as a guide. But a

brush dipped in Chinese white will mark a subject out sufficiently if it is drawn straight on to the plate ; or if it is desired to reverse the subject, then a sketch can be made on tracing paper with soft pencil ; the tracing turned face down on the plate and the lines traced over from the back. This will transfer the sketch on to the plate very well.

In working a plate, reversed, out of doors, a looking-glass can be used. It is fixed on an easel or anything that will support it, and the etcher, turning his back on the object to be etched, draws from its reflection in the glass.

Needling.

Now comes the scratching through the ground of the lines with the needle. Anything that has a sharp round point will do to scratch with ; generally it is a rather thick piece of steel tapered down to a fine point, but a sewing needle driven into a stick of wood till only one-eighth of an inch or so projects, and the wood pared away towards the needle, does capitally ; or a jewel point may be used, or indeed any point. Different thicknesses of needles may be used to make thick lines and thin ones, but it is not, perhaps, so good as using one needle, and getting the different thicknesses by biting with the acid. In needling the plate the point should only just graze the metal, and it is necessary for the point to be perfectly round to prevent it catching and destroying the freedom of the line.

All the lines on a plate are laid with a careful reference to their biting in the acid, and with a reference, too, to the particular kind of mordant they are to be bitten with : and a man who draws the lines upon a plate and does not bite them himself is not an etcher—only a draughtsman on copper.

The bath.

There are several kinds of mordants used. The one

most general, perhaps, is that made from nitrous, or nitric acid, one-half acid, and one-half water, or one-third acid and two-thirds water (*mixed some hours before using, oh! ye beginners!*) In acting on the metal, this acid forms a gas which comes away in bubbles, and has some effect in breaking away the ground at the edges and widening the lines. Nitric acid.

The next most popular bath is called the Dutch mordant, made of two parts Chlorate of Potash, ten of Hydrochloric acid, and eighty-eight of water. It is very slow in action compared with the nitric bath, but the lines are much finer in quality, going deeper into the plate without widening so much. There is also no gas generated in the lines. This is the mordant used for working in the bath, because, being slow in action, it allows time to finish the design without the lines first drawn being bitten deeper than they should be: and also the slight chlorine gas given off is not unpleasant or injurious, whilst that from the nitric bath soon gets unbearable, and is very injurious to the chest. These two are practically the only baths, but others are sometimes used; of course anything which will decompose copper will do, such for instance as perchloride of iron, which is a capital mordant. The Dutch bath.

Now let us follow the biting of a plate through, with, say, the nitrous bath. A new bath is colourless, and looks innocent as water; putting your finger in, however, for a moment or two will quickly remove this impression, and be perhaps a good lesson. After biting a plate, however, the colour of the liquid changes to a beautiful blue green, owing to the copper eaten out of the plate being converted into nitrate of copper. After having had your finger turned Biting.

yellow, it will not perhaps be necessary to remark that it is well to be careful and not spot the acid about on clothes or anything near, else bright-coloured and indelible spots will immediately appear.

Now you take your plate in hand and look lovingly at it. It seems such a pity to sacrifice your drawing in beautiful gold lines (for the scratches of the needle through the black ground look like lines of burnished gold); but with a sigh, and something of a prayer, and a wary eye to the back and edges of your plate to see all exposed places covered with varnish, in it goes! and now begins the etching proper. White porcelain dish, green acid, and black plate with the gold lines—gold only for a minute, however, for they soon go grey and then green, and then for a minute or two you have a design which looks as if it were done with bronze green lines. But now they are all lost in a cloud of bubbles of gas, and these must be brushed off with a feather, or they would stay in the lines, and prevent the acid acting equally. Again they are covered with bubbles, and now if there are any very faint lines in your design, such as sky in a landscape, the plate must be

Stopping out.

taken out and these lines covered over, or as it is technically called "stopped out" with some of the varnish which covered the back of the plate, so that the acid shall not get at them any more, because of course the longer the acid acts on a line the deeper and the wider it gets. This being dry, the plate is put in the bath again, and the bubbling goes on, rather more fiercely now. The biting will go on now for several more bubbleings till the next darkest lines have bitten in sufficiently, and while it is

going on you will have time to notice peculiarities in the action of the acid.

It would seem reasonable to suppose that all lines under the action of the acid for the same length of time would be bitten in exactly the same depth, and supposing the lines on the plate were quite evenly distributed this would probably be the case: and if this were so the biting of a plate might be divided into intervals of time, and the lines would exactly correspond in degrees of darkness. For instance, if the sky was bitten for one minute and then painted over or "stopped out," then the distance for two minutes (making three in all), then the middle distance for four minutes (making seven in all); then the foreground for eight minutes (making fifteen in all), you would have a gradation of tone ranging in the proportion of 1. 3. 7. 15. from the faintest distance to the darkest foreground.

Time in
biting.

But the lines on a plate are never evenly distributed, and you will notice on watching the plate bite, that wherever the lines are closest together there they bite much faster (owing probably to the generation of heat by the action of the acid on the copper). So it is evident a time calculation would be of no use, and even if this were not so, the temperature of the room in which you are working, or the varying strength of the acid as the bath gets older, and also the different densities of the metal, make so much difference in the acid's action that time is no guide whatever.

Time no test
of biting.

The quantity of gas given off in the form of bubbles is the best indication whilst the plate is in the bath of the depth the lines have bitten, and if you watch the plate carefully as it bites this is a very sure guide as to the depth the lines have gone.

In biting with the Dutch mordant there are no bubbles of gas given off, and it is difficult to tell the depth of the lines whilst in the bath. The only way is to frequently take the plate out and examine the lines closely, removing a bit of the ground if necessary in order to see better.

The Dutch bath turns the lines it is biting dark purple, and so the etching ground is not smoked for working in the bath; and for a plate which is to be bitten with Dutch mordant it is better to use a transparent ground always, as the depth of the lines, being dark coloured, can be more easily seen.

Cleaning off
the ground.

The darkest lines being now duly bitten into their full depth, the plate is washed in water, the ground and varnish from the back dissolved with turpentine and cleaned off, and there your lines are! all sunk into the plate of various depths and thicknesses, and the plate is ready for the printer.

In Plate III. Fig 1, are lines bitten with the nitrous acid bath. This square on the plate was covered with the diagonal lines, all drawn at once with one needle, and a few cross lines added in the lower corner. They were all bitten for two minutes, and then, had the ground been removed, would have printed the same as the light corner bit. This corner was then painted over with stopping out varnish, which of course prevented the acid from biting its way further, and the remainder bitten again for five minutes. Then the middle band was painted over or "stopped out," and the remaining corner bitten again for ten minutes. This was done to show the different qualities biting will give to the same lines; observe, too, the extra depth of the

lines themselves where the cross lines are, this bit in the corner having been under the action of the acid just the same time as the rest of the dark piece, thereby illustrating the effect mentioned above of lines close together biting much faster. As the acid gets down below the surface of the plate, the sides of the furrows in the plate are of course exposed, and the acid works sideways as well as down, and widens the lines.

Another method of etching a plate is as follows. First, only the lines intended to be dark are drawn, and the plate put in the bath and bitten for a certain time. Then it is taken out and the next darkest lines drawn (on the same ground) and the plate bitten again for another period, the first lines being bitten of course much deeper than the second set on account of the start they had. At the end of another period, and if desired, still another, the plate is taken out and fresh work added, and at the end of this time the last work added is quite light and the first lines very dark with a gradation between for the intermediate work. To work a plate well in this manner, however, requires some practice and forethought.

Etching without stopping out.

Now the plate is "proved" by the printing press, and the proof of your work lies before you. First proofs are sometimes rather startling things—all along through the working of the plate you have been picturing to yourself the look of the proof, and the differences between the image and the one realised by the plate, appearing as they do all in a moment, are startling enough. Of course an experienced etcher generally knows exactly what his plate will look like when printed, but it is most interesting

The proof.

to watch the face of a beginner in the craft, as the proof is turned up from the plate and laid in front of him on the press.

It is almost certain to be the case that the plate is either bitten too little in places or too much in others, or both these, or it may be the lines are too open, and patches of quite bright light appear among the shadows, destroying all depth. Supposing it is too light, or "underbitten," and the lines are good in themselves (as of course they ought to be), then there is a method by which they can be made deeper, called "rebiting."

Rebiting.

This is done by covering the surface very carefully with etching ground without letting it go into the lines or hollows, and then putting it in the acid again, when of course they go on biting. It can be done by the dabber, but a much surer way is by the roller. The same operation is gone through as that described in laying a ground with the roller. But for rebiting more care is used and as little ground as possible taken up on the roller. This is then rolled lightly over the plate and leaves the thinnest film of ground adhering to it without stopping up the finest lines. The plate is then heated a little to drive off the oil of spike, but is not smoked, for fear of the ground creeping round the edges of the faintest lines and stopping them out. When the ground has dried for a day or so the biting can be proceeded with just as though the first ground had not been removed. Laying a rebiting ground is an operation requiring very delicate manipulation.

Reworking or
transparent
ground.

In the case of the work being too open and requiring more lines, a "reworking" ground is put on. This is put on in

the same manner as the first ground, either with the dabber or roller, only care is taken to rub the ground into the lines already bitten (to prevent them biting again) and the ground is not smoked. If it was, the faint lines would not be seen through: but put on thinly without smoke all the lines already there can be seen perfectly through the gold-coloured ground. The new work is now put in, and bitten and stopped out in the same manner as that on the first ground, the former work remaining the same. Of course if it be desired that a few of the old lines should be bitten more deeply, the needle may be run into them clearing out the ground sufficiently to make them bite again. As many grounds can thus be put on a plate as is desired, and as many stoppings out made. Some etchers take many days to bite a plate, and stop out thirty or forty times.

But with all stoppings out it is necessary to make arbitrary divisions between lighter and darker parts, which of course in nature there are not. This is not of such great consequence really, because there are many ways of correcting it afterwards, but if the plate is etched direct in the bath a more perfect gradation is obtained. You may wonder what happens to the needle, if it be a steel one, in working in the acid. Well, it gets eaten away gradually, but it lasts out more than one plate, and common sewing needles are cheap enough.

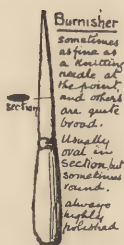
Working in
the bath.

An accomplished etcher seldom binds himself down to one method or process. He probably uses combinations of several on a plate, taking up a process and dropping it for another just as the ideas strike him. So it generally

happens that a good deal of a plate is etched in the bath.

Correcting. It is difficult at first to believe that the work on a plate can be readily altered or modified, and yet it is more easy to do this than to alter a drawing on paper.

Burnishing. Supposing the work on a plate, or part of it, is too dark, or "over-bitten," there are several ways of correcting it. First, by the burnisher. This is a highly polished piece of steel, about as large as a lead pencil, of an oval section and tapered towards the end. It is fixed in a wooden handle and is used upon the plate with oil. It is rubbed backwards and forwards with considerable pressure obliquely over the line it is desired to lighten; and its action is to close together the sides of the furrow in the plate, and make it hold, and yield, less ink. Used skilfully the burnisher is a splendid tool, and many etchers over-bite their plates purposely in order to avail themselves of the gradations which can be obtained by skilfully using it. In Fig 2, Plate III, the lines in the square were all bitten of the same depth, and would have printed an even tone all over, but the lower parts have been burnished to shew the effect of the tool.



Charcoaling. When a considerable portion of a plate is too darkly bitten it can be reduced by rubbing or grinding the surface of the plate away with charcoal—the same kind as that used for surfacing the plate. Of course this acts in a different way to the burnisher, making the lines shallower. Lines which been reduced by charcoal print greyly, a quality which is often valuable.

A mass of lines over-bitten can also be made to print

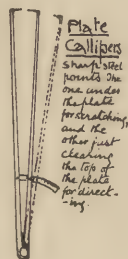
much lighter by placing the plate face down on a polished anvil and striking the back of the plate with a full-faced hammer. This drives up the bottoms of the lines and crushes the division between them broader, acting a good deal like a burnisher, only without the danger there would be with the burnisher of destroying the sharpness of the lines.

Passages in a plate can be erased quite easily. Faint passages can be taken out perfectly by the burnisher, like the corner of the square in Fig 2, Plate III, and of course if the passage is a broad one, snake-stone and charcoal will remove it entirely. But in isolated and fairly deep lines the copper being crushed down by the burnisher, would leave too abrupt an indentation in the plate to print clearly. In such a case the quickest way is to cut out the part on the plate with a three-square scraper or scorper, mark the place on the back of the plate with plate callipers, place it face down on the polished anvil, and knock the hollow level again. The knocking up is done by an engraver's hammer, or if the place is small, punches of different shapes.

It requires considerable skill to knock up well, because if the plate is hammered much in one place the tension of the surface is altered, and the plate buckles and springs about in a very unpleasant manner, and to recover or set a plate thus sprung takes a great deal of practice.

Dry-point is generally used to complete an etching, but it is dry-point robbed of its own peculiar beauty by the "bur" being removed. A dry-point line is made by scratching it direct into the plate by a sharp point, which may be a steel needle, or diamond point, or a diamond-

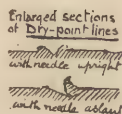
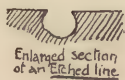
Erasing.



Dry-point.

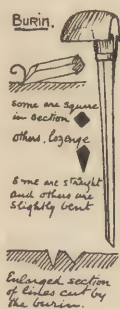
pointed piece of steel, but is usually a steel needle sharpened either round or to a very slight angular point.

Dry-point
Line.



In a line bitten by acid the copper which was in the furrow is dissolved, but in a dry-point line it is turned up to one or both sides of the line in a ridge which is called "bur." If this bur is removed (scraped off with a scraper), the line prints very much like a bitten or engraved line (excepting, of course, that it is never so free as an etched line by reason of the force necessary to make the cut), and it is in this way that it is used to mix in with etched work. But a plate worked entirely in dry-point has all or most of this bur left on. This makes the line print with a wonderful richness and velvety softness, because the ink cannot be wiped away from the bur, and so the line melts away into the paper with a mysterious graduation. Most beautiful dry-point etchings are! They do not wear so long in printing as an etching, because the bur is very tender and soon crushes down with the pressure, and wears away in the process of wiping the plate.

The Burin.



The "burin" or "graver" is the instrument by which line engravings are done. It is a square, or lozenge-shaped bar of steel ground off at the end to an angle, and set in a short handle; it is *pushed* forward by the palm of the hand. The lines, therefore, are very formal and severe, and utterly different from those of an etching. Nevertheless, it is useful sometimes to plough out a few lines on an etching with the graver, and this is frequently done. There is a slight amount of bur on the sides of a burin line, although the bulk of the metal removed by the tool is cut clean out in little curly shavings; and if this bur

is left on a curious dry-pointy look is given to the proof. In Fig. 8, Plate III., are some lines cut by a burin to shew the character of the line. In a burin line there can be a most perfect gradation.

Roulettes are tools used mostly by engravers, but sometimes they are used by etchers as well. They are little steel wheels with serrated edges, very hard, and set at the end of a handle. On being rolled over the plate they make rows of dots with a certain amount of bur to them, or they may be used over an etching ground, and the marks they make on it bitten in. They are made with from one to several rows of teeth each; and, of course, if one with several rows of teeth is rolled continually over the plate, a tone is formed, and this is the way they are generally used in etching.

Roulettes.



Fig. 9, Plate III. is given to shew roulette work, not bitten.

Soft ground etching is little practised now. The quality of it very nearly resembles lithography. Ordinary etching ground and tallow are melted together in about equal proportions, less tallow being used in summer than in winter, because of the different temperatures of the atmosphere. A ground is laid with this mixture and smoked exactly the same as for an ordinary etching; only, the ground being very tender, it must not be touched with the fingers. A piece of thin paper (not glazed), is now taken—tissue paper does very well—and is strained over the plate in the same manner as water colour paper is strained on a stretcher—care being taken that no pressure is put on the ground. Then, carrying the hand on a rest, the

Soft ground Etching.

design is drawn on the tissue paper with a lead pencil, bearing with a moderately firm pressure, harder in the dark than in the light, just in the same manner as making a pencil drawing. The paper is now carefully removed from the plate, and it will be found that where the pencil has gone, the paper has picked up the ground, leaving a dotted line corresponding to the grain of the paper. This is bitten in the same manner as an ordinary etching, and, if necessary, worked up afterwards with the roulette and dry-point. Fig. 3, Plate III. is an example of this work.

Tints. There are various methods of biting a tint on the surface of a plate to give support to the lines. And there are some very curious ways of treating an etched plate after the lines are all bitten, which do not admit of being classed under any special process. If a clean copper plate is put into the acid bath without any protection whatever and allowed to bite for any length of time, the plate is attacked equally all over by the acid; and if it were then printed would yield a tint of ink very little darker than that given by the polished copper. And in the case of a plate covered with lines and made perfectly clean before being put in the acid, the whole surface of the plate is lowered, leaving the lines wonderfully near what they were at first, only, perhaps, a trifle softer and greyer. So that it is necessary to partially protect the plate in some way in order to obtain a bitten tint. Examples of some of these methods are given on Plate III., and a short description of how they are done; but the farther you get away from a line, the less the work belongs to etching proper.

Etching and printing are so bound up together that it is impossible to speak of one without the other. Printing.

There are very many ways indeed of printing a plate, each one of which would give a different character to the look of the work on the proof. The kind of material the proof is printed on, the kind of ink used, the manner in which the ink is wiped away, and the way it is put through the press, all influence the result greatly. An accomplished etcher knows most of these differences, and if he does not print his proofs himself, works his plates with a full knowledge of the manner in which he wishes them to be printed. Etching printing is a very delicate operation, and if an etcher gives the time and has the necessary manipulative skill to learn the craft of it, he can print his own plates perhaps better than anyone else.

But to earn a reputation like that of Goulding, requires a man with an absolute knowledge of everything in his craft, and besides, a soul sensitive to every idea an etcher can put in his work, so as to give these ideas the fullest expression possible.

The process of printing a simple proof is something like this. The constituents of the ink are first chosen, viz., linseed oil of some consistency to suit the particular plate, and the various pigments to make the colour and body. These are mixed just before using on a slab with a muller. The plate is then probably made just warm on the heater and filled in with the ink, put on with a dabber.

A piece of coarse muslin is now taken and folded in a peculiar way and the ink gradually wiped away. Then a little ink is dabbed on to the palm of the hand, the hand

drawn over a lump of whitening, the two mixed together by rubbing, and the hand passed tenderly over the surface of the plate. If the plate was wiped with a hard pressure by the hand and then printed, the result would be an etching in which the lines would grin out from a white background, like a gridiron on a sheet of note paper. But wiping tenderly cleans the plate, leaving however a delicate tone of ink still adhering, more or less, just as the printer desires.

Retroussage.

Then, perhaps, a process called *retroussage* is employed. This consists in taking up a piece of very soft and fine muslin folded into a loose pad, and moving it lightly over the plate in a caressing mood. The fluff on the muslin drags some of the ink in the furrows of the plate over the edges, making them appear darker and softer, and getting a quality which can be obtained no other way. The edges of the plate are then cleared of ink and it is laid on the bed of the press, just warm. If the proof is to be on paper it is wetted some hours before so as to be slightly damp, and in the case of many papers brushed on the surface with a brush, laid upon the plate, the blankets pulled down on the top, and it goes through the press.

Something of this method is followed in every proof, but there are many variations. Large plates, for instance, are sometimes filled in with many different kinds of ink, to give different qualities, and even suggestions of colour, to different parts of the proof.

The lines on a proof all stand away in relief from the paper, because, of course, it is pressed right into all the hollows of the plate by the press.

In order to preserve this relief of the lines, proofs are dried without pressure of any kind for some days, and then damped and pressed out flat.

Etchings should always be looked at in a side light, because the relief of the lines in this light gives them a peculiar quality of richness and depth.

Impressions from a plate are, now-a-days, generally divided into two classes—proofs and prints. In early times the only proofs of plates were the impressions the etcher took to prove to himself that he was going right with his work, and as soon as the plate was completed there were no more proofs.

Proofs and
Prints.

But according to modern ways proofs are the earliest impressions taken from a plate, and of a declared number. These are signed by the etcher and are supposed to shew the plate in its perfect condition. Prints are not signed.

There is no work which exercises more fascination upon the worker than that of Etching. There is so much craftsmanship about it, and it is trammelled by no kind of rules : you do just as much and as little as you like. It is essentially suggestive, and doing a plate is like talking to a familiar friend about something you enjoy. There are etchings with few lines, and etchings with many ; etchings in full tones, and also with no attempt at tone. For myself I love best etchings with few lines, and tone and form capriciously mixed up, or perhaps no tone except what is suggested in some unexplainable way ; but yet I can enjoy etchings worked up into full tone.

As an example of an etching worked up, Mr. Wilfrid

Ball has very kindly etched the plate which forms the frontispiece to this book, and no one I think does work of this kind with such a sweetness as he puts into it.

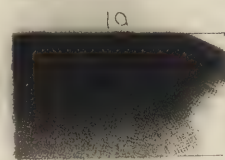
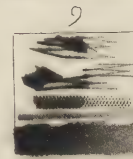
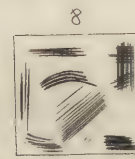
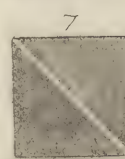
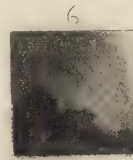
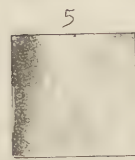
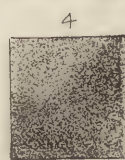
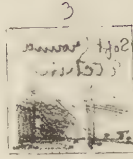
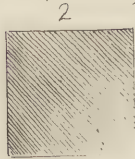
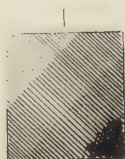
Etching is such a vital art. I don't believe the qualities which make an etching good can be explained, any more than can the quality painters and musicians express by the word "tone" used in its highest sense. So little and such individually inaccurate work may make a good etching, and so much solid careful work can make such a very uninteresting one.

Be the etcher ever so accomplished, he cannot do a good etching just because he wants to. If he etches a thing because he wants to etch it whether it makes a good plate or not, it stands a chance of being worth something, but it is no manner of use taking in hand a plate and thinking "now what shall I etch?" As an instance, I wanted to etch a little plate in very pure line as an example of that kind of work for this book. I thought of it for several days, settled the subject, and did it. I might have known better. It was a very solemn and stupid piece of business, and after the second proof I promptly doubled up the plate and hammered it close together.

In place of this, I have substituted a little plate done some time ago. It will serve as an example of a plate done entirely out of doors. I wish it had been done with fewer lines, but I like it for some things.

I believe that more enjoyment is got out of etching than any other form of Art. And in ending this brief description of things anent etching, I would assure those who love etchings on paper that there is besides this a world of enjoyment for those who make them on copper.

PLATE N° 3



5



DESCRIPTION OF PLATE III.

Fig. 1. Etched lines bitten in different depths. Described page 18.

Fig. 2. Etched lines burnished at lower corner. Described page 22.

Fig. 3. Soft ground etching. Described page 25.

Fig. 4. Sandgrain. This is a method of making a tone Sandgrain.
on an etching which has been used a good deal, and some plates worked in this manner have been called mezzotints. They are nothing of the kind, however. An ordinary etching ground is laid, and a piece of sandpaper is laid upon the plate, sand side touching the ground, and passed through the press several times. The sand pierces the ground in a multitude of places, and then the plate is bitten and stopped out in the same way as an etching. The upper corner in the example was stopped out before the lower half; of course by using sandpaper of different degrees of coarseness, the quality of the tint can be regulated. A deeply bitten tint can be worked upon something in the same way as mezzotint is worked on, but a sandgrain which has been much worked upon is apt to be very poor in quality.

Silk, and materials of various textures can also be pressed upon the plate, and give various textures.

Fig. 5. Foul biting. When the ground on a plate gives Foul biting.
way in the acid bath, either from the ground itself being defective, or from its being ill laid, the acid of course attacks the plate, and it is said to be "foul-bitten." Foul biting is often seen in etchings, and very often can be made

of great use in suggesting tone ; of course it can be taken out where it is not wanted.

Aquatint.

Fig. 6. Aquatint. Aquatinting is a very ingenious process, and there are several ways of doing it, all depending on the partial protection of the plate by specks of resin. A thin solution of resin or some like substance in spirits of wine is poured over the plate and drained off at one edge, so as to cover the plate quite evenly. This solution, upon drying, cracks up into very fine fissures, leaving the resin deposited in very small specks evenly all over the plate. The plate is slightly heated to make the resin adhere, and then is bitten and stopped out in the same manner as an etching. Of course wherever the resin is, the plate is protected, and between the little islands of resin the acid bites briskly. By examining the example with a magnifying glass, the shapes of the grain thus obtained can be seen distinctly.

It takes some practice to lay the ground (as depositing the resin is called) well, and the alcohol plays many inexplicable tricks ; some days the solution will not granulate at all, owing to the state of the atmosphere, but with patience and often several tries, a most even ground can be laid. Another way of laying the aquatint ground is by depositing the resin on the plate in the form of very fine *dust* and then heating to fix it. Beautiful grounds are laid this way.

Sulphurtint.

Fig. 7. Sulphurtint. This is obtained by corroding the bare surface of the copper with powered sulphur. The part of the plate to be acted upon is coated with oil, and the sulphur dusted on to it. The corrosion takes place rather

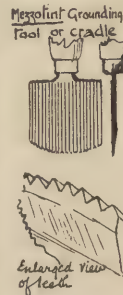
quickly, and can be carried to a very dark tint, but it is very tender, and unless it is strengthened by being rebitten with acid, does not last many impressions.

Fig. 8. Lines cut with a burin, literally the same lines used in line engravings, see page 24. They are given here to show the entirely different character they have to bitten work. So different that when they are used in etching, it is usual to rebite them with acid to prevent them being out of character with the surrounding work.

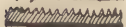
Fig. 9. Roulette work, described page 25. The lines at the top done with a roulette with a single row of teeth—the next row with a double-toothed wheel, the next two with wheels of several rows of teeth, and the lower band with one of the latter kind rolled many times over the plate to form a tone. On the left-hand side of the square the bur formed by the tool is left on, and prints softly, and on the right of the square it has been removed.

Fig. 10. Mezzotint. In pure mezzotint, there are no lines, and no work is done by acid. The plate is roughened up all over by a special tool, called the rocker. This is like a broad chisel with the edge ground to a segment of a circle and the front surface of the chisel cut into fine grooves, looking something like a fine comb; of course when these are ground off to an angle as in sharpening a chisel, the tops of the ridges form sharp points. The tool is rocked over the plate a great number of times, every roll making a row of dots, and this being done methodically so that every part of the plate gets the same quantity of rocking, the result is the plate gets evenly covered with dots, and every dot that is made turns up a corresponding little

Mezzotinto.



*Enlarged section
of grounded plate*



*To show the marks
made by first
passage of tool*

hill of bur. It is this bur that prints in mezzotint. When a plate is covered thus, or "grounded" as it is termed, it would be a uniform black tint if printed, like the upper part of the example. The engraver then cuts away the bur with a sharp scraper where it is to be lighter (as in the lower part of the example), and finally where this is to be quite white, it is burnished smooth. In laying the ground on the example the right-hand side was not quite covered, to show the individual markings of the tool, or rocker.

Fig. 11. Dry-point. See page 24. Given to shew the quality of the bur of a dry-point line. Very much the same as mezzotint, only done with lines instead of dots.




LOWE
 of these things are the
 master of Etchings
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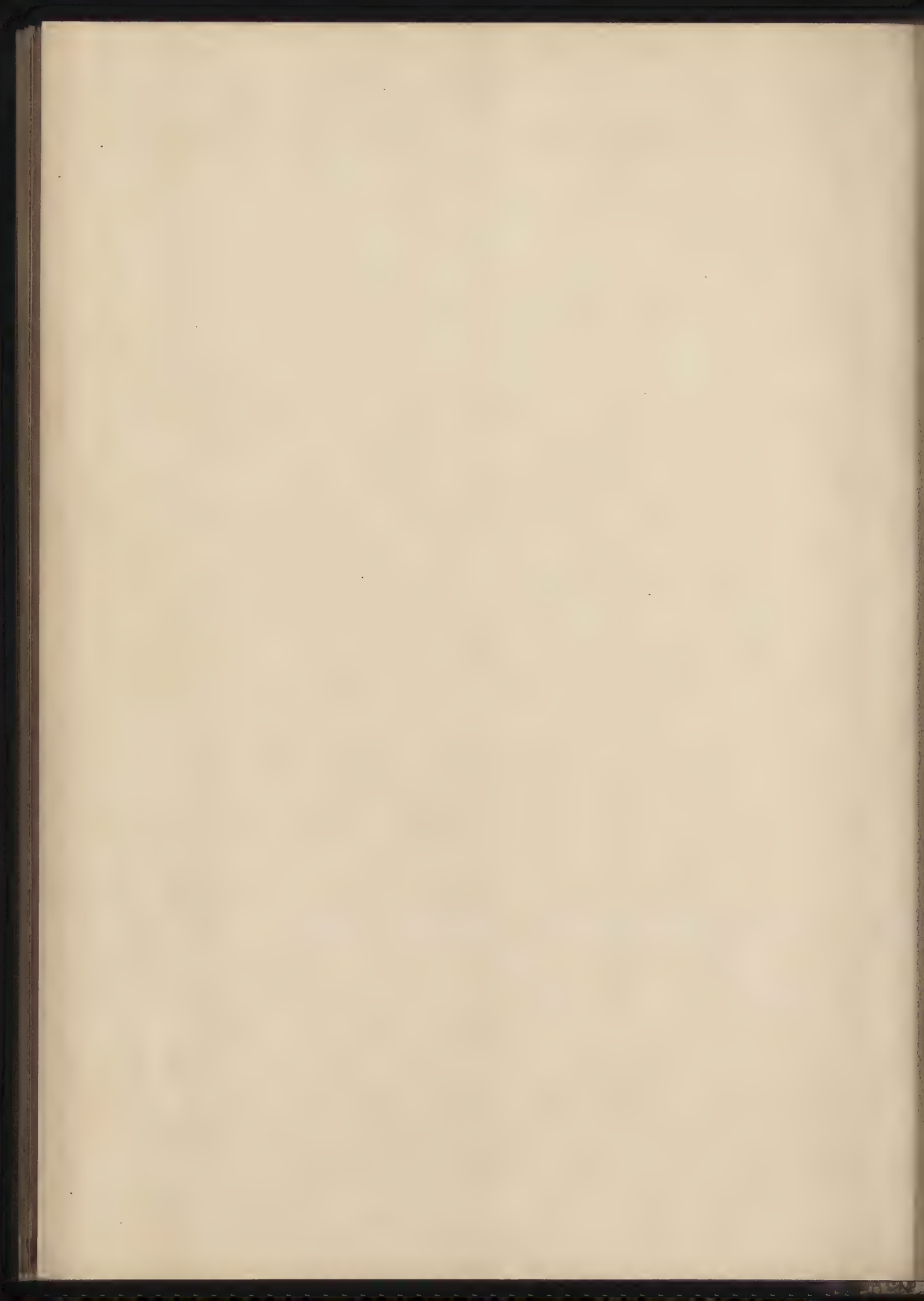
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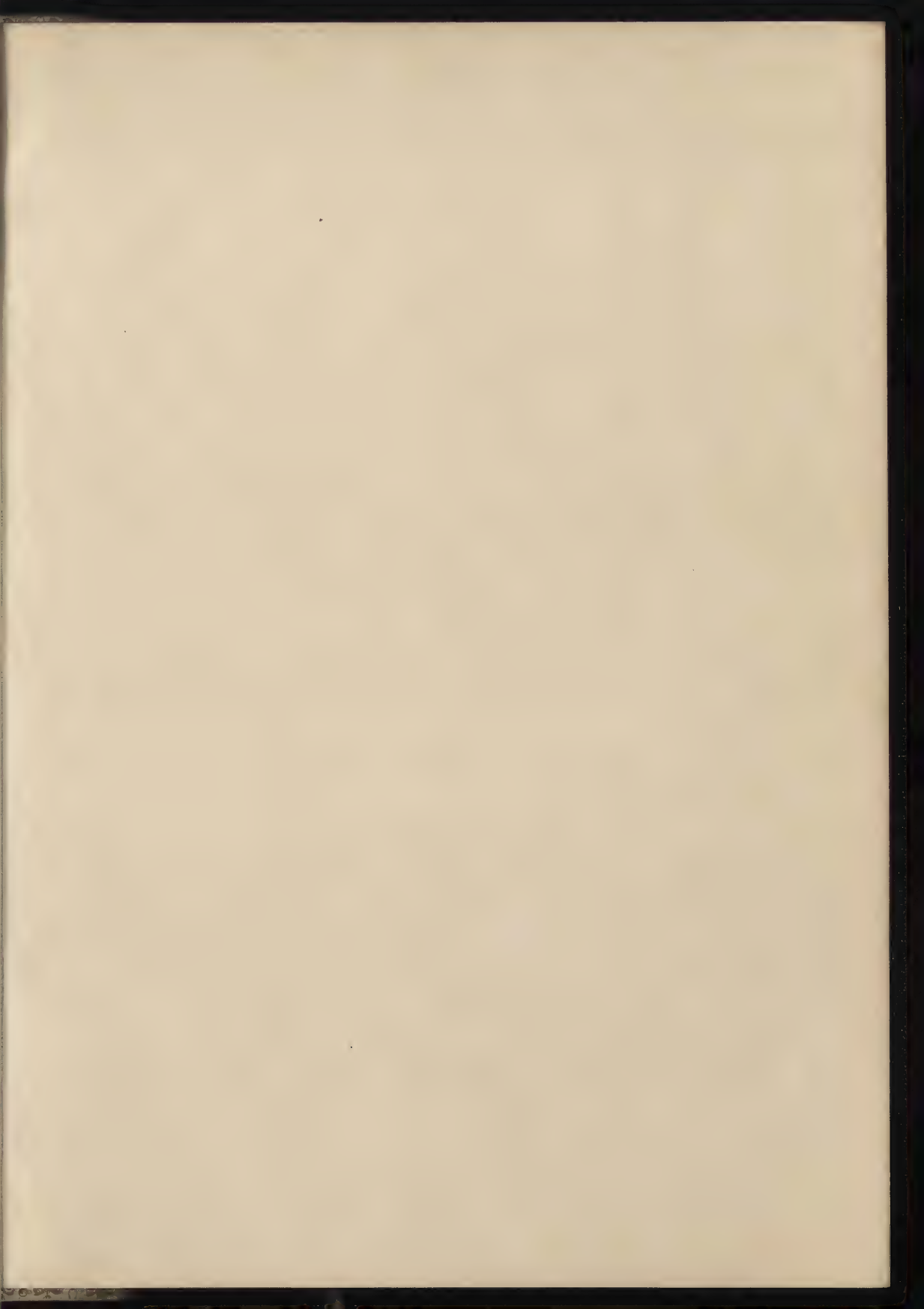




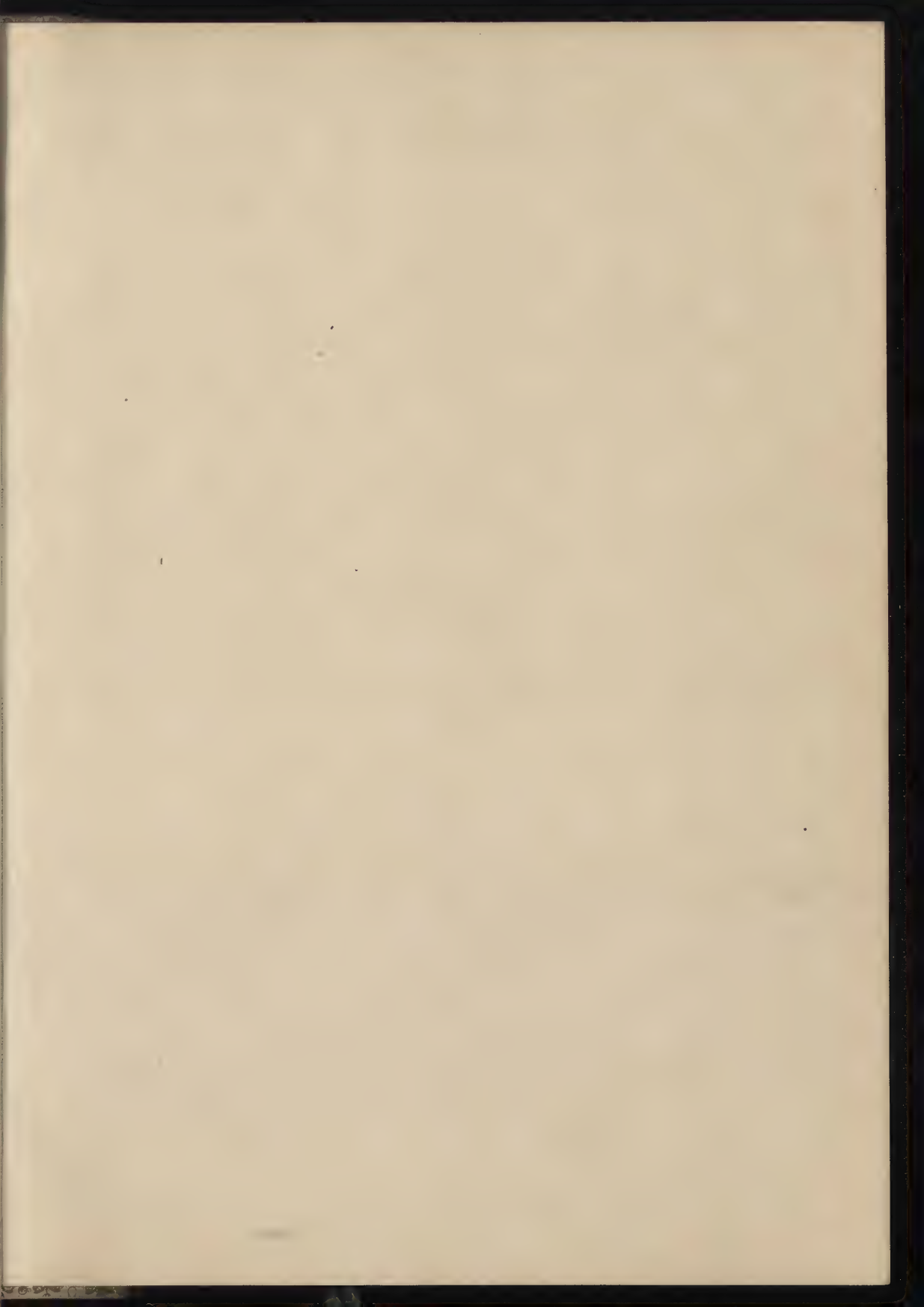


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